Expanding Maryland's Dental Public Health Infrastructure FY 2008 – FY 2013

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Executive Summary

Access to oral health care is a critical problem for underserved populations in Maryland. The 2000 – 2001 Survey of the Oral Health Status of Maryland School Children conducted by the University of Maryland Dental School found that 53% of children in kindergarten and 3rd grade had untreated tooth decay in their primary teeth. In addition, a 2000 survey of Maryland Head Start children found that more than 50% of the children had some type of decay. Adults and disabled individuals with advanced dental problems or with medical complications are oftentimes referred for services at distant locations or frequently unable to access treatment.

To remedy this access problem, the Office of Oral Health is proposing *Expanding Maryland's Dental Public Health Infrastructure*, a comprehensive overhaul to the State of Maryland's Dental Public Health infrastructure. This includes establishing 11 dental clinics in local health departments, as well as improving the 13 existing clinics that do not meet minimum standards. This initiative will ensure that each jurisdiction has at least one facility to serve those Maryland residents who do not have access to private dental services.

But having good structures and equipment is not, by itself, enough. To ensure that Maryland public dental clinics are adequately staffed with quality dental professionals, it is necessary to ensure that public service remains an attractive and viable option for dental professionals. State salary ranges for dental professionals currently are significantly less than the industry standards with the salary cap for state dentists less than the 25th percentile of dentist salary ranges and the salary cap for state dental hygienist less than the 20th percentile of profession salary ranges. *Expanding Maryland's Dental Public Health Infrastructure* proposes to remedy these issues by revising the state salary scale for dental professionals to more closely correspond to the dental industry salary ranges.

Additionally, to further assist with serving the Maryland public's dental needs, *Expanding Maryland's Dental Public Health Infrastructure* proposes to revise the *Maryland Dent-Care Loan Assistance Repayment Program* (MDC-LARP). Under the current terms of MDC-LARP, a very small proportion of dentists can be served by the program, and less than 7% of graduating dentists have student loans that are less than the funding provided by MDC-LARP. Participation rates reflect this. Therefore, to increase participation in the program, and maximize the program's public benefit, this plan proposes to increase funds from \$71,000 to \$150,000, a level that can adequately meet the needs of 53% of dentists with student loans.

Finally, as the Office of Oral Health has been without dental expertise since January 2002, this plan recommends the hiring of an Office of Oral Health Dentist. This dentist will serve as the lead clinical expert on dental public health for DHMH and will develop policy regarding best strategies for improving dental public health outcomes.

The outcome of this *Expanding Maryland's Dental Public Health Infrastructure* will be a dental clinic in every county, staffed by high-caliber dental professionals, with coordinated best strategies from the State Office of Oral Health. The total projected cost is \$13,486,000 (\$2,160,000 in FY08, \$2,514,000 in FY09, \$2,870,000 in FY10, \$2,545,000 in FY11, \$2,194,000 in FY12, and \$1,203,000 in FY13). As such, it promises to be a comprehensive reform to the State's dental public health infrastructure.

1.0 Project Title

The title of this project title shall be: *Expanding Maryland's Dental Public Health Infrastructure*.

2.0 Project Objective

The goal of the project is to ensure a base level of dental services to Maryland children, pregnant women, and adults with chronic disease.

3.0 Problem Statement

Access to oral health care is a critical problem for underserved populations in Maryland. *The* 2000 – 2001 Survey of the Oral Health Status of Maryland School Children conducted by the University of Maryland Dental School found that 53% of children in kindergarten and 3rd grade had untreated tooth decay in their primary teeth. In addition, a 2000 survey of Maryland Head Start children found that more than 50% of the children had some type of decay. Adults and disabled individuals with advanced dental problems or with medical complications are oftentimes referred for services at distant locations or frequently unable to access treatment.

Currently, only 13 of 24 Maryland local health departments have an on-site dental clinic. The need for oral health services is an issue across the state in each jurisdiction. Also contributing to the access to oral health services problem is that local health departments are unable hire and retain appropriate dental professionals because of the discrepancy between private salary rates and public salary rates for these professions. Additionally, the Maryland Dent-Care Loan Assistance Repayment Program (MDC-LARP), while providing some incentive to dentists to provide services to the Medicaid population, is inadequate to motivate most dentists to even apply to the program.

4.0 Outcomes

If successful, this project will result in all 24 Maryland local/county health departments having dental clinics on-site with quality dental professionals providing a minimum of 3,000 visits for Maryland children, pregnant women, and adults with chronic diseases per year. The following services will be provided in each jurisdiction:

- Emergency oral health services: Limited services necessary for the relief of acute conditions.
- <u>Preventive oral health services</u>: Services necessary to prevent the onset of the dental disease process.
- <u>Basic oral health services</u>: Services that are necessary to basic dental care and includes those services provided early in the disease process and which limit the disease from progressing further.

A more detail listing of minimum services provided by local dental clinics can be found in **Addendum 1.**

5.0 Project Description

Four components comprise this project. The **first,** increasing the effectiveness of MDC-LARP, focuses on attracting Maryland dentists to providing services to Medicaid recipients. The **second,** establishing a dental clinic in every local health department, dramatically increases access to public dental services, making services available in every county. The **third,** establishing a position of Office of Oral Health Dentist, directs and coordinates the efforts of local dental clinics and professionals to further enhance effectiveness of the public's oral health system. The **fourth,** bridging the private-public service salary gap for dental professionals, aims to ensure that pay scales do not unnecessarily limit the option of going into public service for dental professionals; it ensures that the public has quality professionals available to serve their dental needs. These four components represent a comprehensive overhaul to the public oral health system and promises to drastically enhance access to quality dental public health services.

5.01 Increasing the Effectiveness of the Maryland Dent-Care Loan Assistance Repayment Program

The current terms of MDC-LARP only covers a portion of the educational debt dentists have when considering applying to the program. As a result, the program has seen a decline in the number of applicants interested in participating in the program.

- Less than 7% of dentists have student loans that can be completely repaid by LARP funds. (The program currently funds each participating dentist at \$99,000 over three years. Out of that amount, 39% must be used to pay the associated federal tax liability, resulting in only \$71,220 going towards loan repayment over the three years.)
- The majority of dentists upon graduation from dental school have educational debt ranging from \$100,000 to \$350,000.

To increase the attractiveness of the program and to increase the number of dentists who provide services to Medicaid recipients, it is recommended that MDC-LARP funds be increased to \$150,000 per dentist along with providing the 39% tax compensation under the current system, for a total of approximately \$210,000 per dentist. As 53% of dentists with student loans have less than \$150,000 in student loans, the pool of eligible candidates is significantly increased with a corresponding participation rate increase therefore anticipated as well. For a summary of dental student loans upon graduation, see **Addendum 2.**

5.02 A Dental Clinic in Every Health Department

The model dental care unit that will serve as the minimum benchmark for dental care in Maryland is a 3-chair facility and can accommodate up to 3,400 visits per year and serves 1,000 to 1,800 Maryland residents annually. It is staffed by one dentist, one dental hygienist, one dental assistant, and one dental program coordinator and contains all the necessary equipment to run such a facility.

This facility will primarily serve Maryland children, but will serve both adults and children, with a minimum of two days per month dedicated to serving adults with chronic diseases such as diabetes and cardiovascular disease. The model dental care unit will provide emergency dental services, preventive dental services, and basic dental services. Some of the most common

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¹ For dentists' student loans distribution, see **Addendum 2**.

services the facility shall provide include: dental exams, cleanings, sealants, fluoride treatments, x-rays, restorations, dentures, extractions, and oral health education. For current capacity of local health department dental clinics, see **Addendum 3.**

5.03 Office of Oral Health Dentist

The Office of Oral Health has been without dental expertise since January 2002. The position will serve as the lead clinical expert on dental public health for DHMH and will develop policy regarding best strategies for improving dental public health outcomes. Other responsibilities and duties of the Office of Oral Health Dentist can be found in **Addendum 4.**

5.04 Bridging the Private-Public Service Salary Gap

Competitive salaries for dental professionals ensure that Maryland residents have access to the work that quality dental professionals provide. Currently, local health departments cannot offer salaries competitive enough to attract dental personnel. In some instances, local health departments receive no applicants for dentists, dental hygienists, or dental assistant postings. In fact, dental professionals, especially dental hygienists and dentists, must take a substantial pay decrease to work in the public sector. For instance, the base pay in the state system for dental hygienists fall at less than the 10th percentile in the salary distribution for the occupation as a whole, while the corresponding maximum salary falls at less than the 25th percentile. Similarly, for dentists, the base pay is less than half the 25th percentile of salaries for the occupation. The maximum salary barely exceeds the 25th percentile, and is \$10,000 below the average salary for the profession.

To make current state salary scales competitive with private industry and enable local health departments to attract and retain qualified professionals, it is recommended that the following adjustments be made to more closely match the salary ranges of the overall market for each dental position:

	FY2006 Sta	te Pay Scale	Recommende	d Salary Range	
	Base	Max	Base	Max	
Dental Assistants	\$21,575 \$35,493		\$21,575	\$42,030	
	\$10.37/hr \$17.06/hr		\$10.37/hr	\$20.21/hr	
	~20%-tile ~75%-tile		~20%-tile	~90%-tile	
Dental Hygienists	\$25,742	\$48,599	\$38,470	\$85,660	
	\$12.38/hr	\$23.36/hr	\$18.49/hr	\$41.18/hr	
	est. 5%-tile	~20%-tile	10%-tile	90%-tile	
Dentists	\$57,948	\$106,013	\$93,600	\$166,400	
	\$27.86/hr	\$50.97/hr	\$45.00/hr	\$80.00/hr	
	est. 5%-tile	~25%-tile	est. 10%-tile	est. 90%-tile	

See **Addendum 5** for a more detailed account of salary ranges for oral health professionals.

6.0 Budget

The costs for implementing the preceding programs are outlined here, and summarized in **Addendum 6A.** The total projected cost is \$2,160,000 in FY08, \$2,514,000 in FY09, \$2,870,000 in FY10, \$2,545,000 in FY11, \$2,194,000 in FY12, and \$1,203,000 in FY13. These figures do not include the dental professional salary increases detailed below in 6.04.

6.01 MDC-LARP

The total amount for the increased MDC-LARP funds, to be phased in over three years will be \$347,500 in FY 2009, \$695,000 in FY 2010, and \$1,042,000 in FY 2011 and thereafter. For further detail regarding these calculations, see **Addendum 6B**.

6.02 County Dental Clinics

The total cost to establish a model dental care unit is estimated at \$680,000 (with first year operating costs included). Of this, \$280,000 is allocated to first year operating expenses. A three-chair dental clinic that bills Medicaid can expect up to \$290,000 in revenue per year with an estimated \$255,000 yearly expenses. Thus, once established, the facility is self-sustaining. See **Addendum 6C** for the expense breakdown.

There are 11 counties without a dental clinic. The requested funds to establish these 11 dental clinics and to improve current county facilities to provide the minimum dental care described above is \$8,480,000, to be disbursed as follows: In FY2008, FY2009 and FY2010, \$2,040,000 each year, establishing a total of three dental clinics for each of three years. In FY 2011, the remaining two clinics are established with a capital lay out of \$1,360,000. Finally, in FY2012, \$1,000,000 has been allocated to improving Carroll and Washington county dental clinics to meet minimum specified standards, and making any other improvements necessary to the already existing dental clinics. In addition, at the conclusion of FY2012, the program will be evaluated to determine any additional improvements that may be necessary.

This phase-in plan is summarized in **Addendum 6D**.

6.03 Office of Oral Health Dentist

The salary for the Office of Oral Health Dentist is estimated at \$120,000, beginning in FY2008, and continuing thereafter with standard pay increases.

6.04 Dental Professional Salary Increases

In order to obtain an accurate cost for increasing salaries of dental professionals it is necessary to know each dental professional's salary grade and step and the subtract his from the new salary grade and step, with the resulting difference representing the cost of the increase for that professional. More resources should be devoted to researching this, if this recommendation to increase salaries is adopted. However, for the purposes of this concept paper, and to arrive at a rough estimate for costs associated with increasing dental professional salaries, it has been estimated that for FY2006, \$1,193,400 is allocated to dental professional salaries. In order to increase the salary ranges to as indicated above (see sec. 5.01), annual salary expenditures are estimated to increase to \$1,837,400. Therefore, the expense associated with the increased salary range of dental professionals is estimated at an annual \$644,000. See Addendum 6E for the details and assumptions upon which this estimate rests.

7.0 Recommended Action Steps

It is recommended that the following action steps be taken to expand dental public health capacity in Maryland.

- Increase the MDC-LARP maximum allotment to participating dentists from \$99,000 to \$210,000 per dentist to ensure that \$150,000 goes towards educational debt. This increase, while significant, will enable the program to attract more applicants.
- Recruit and hire a dentist for the Office of Oral Health. If this is not possible, investigate a joint appointment with the University of Maryland Dental School and DHMH for this position.
- Infuse the Office of Oral Health with an additional \$8,480,000 over five years, starting in FY 2008 and ending in FY 2012, to increase dental public health capacity through local health departments. Current Office of Oral Health funding is required to maintain current programs such as school sealant programs, fluoride rinse programs, and oral cancer initiatives.
- Conduct a thorough salary study, including investigating the establishment of a separate pay scale for dental, for the three dental professional categories (dentists, dental hygienists, and dental assistants) in coordination with the Maryland Oral Health Association (MOHA). MOHA represents the 13 local health departments with dental clinics as well as other community dental clinics.

Addendum 1 Dental Clinic Minimum Services

Emergency Oral Health Services

Emergency dental services are those necessary for the relief of acute conditions.

- a. Initial treatment for acute infections.
- b. Other emergency dental procedures are those determined by the provider to be of an urgent or emergent nature but which do not necessarily represent acute conditions as outlined above. Examples include: a broken denture, toothache, vague pain, or chipped tooth.

Preventive Oral Health Services

Preventive dental services are those which prevent the onset of the dental disease process.

Basic Oral Health Services

Basic dental care includes those services provided early in the disease process and which limit the disease from progressing further. They include most diagnostic procedures, simple restoration of diseased teeth, early treatment of periodontal disease, and many surgical procedures needed to remove or treat oral pathology.

 $\begin{array}{c} \textbf{Addendum 2} \\ \textbf{Dental Student Debt upon Graduation}^* \end{array}$

Debt	All Graduates
\$0.0	12.45%
\$1-\$29,999	2.18%
\$30,000 - \$49,999	1.42%
\$50,000 - \$79,999	3.2%
\$80,000 - \$99,999	3.24%
\$100,000 - \$149,999	36%
\$150,000 - \$350,000	41%

* ADEA Instituted for Public and Advocacy, American Dental Education Association, Dental Education At-A-Glance 2004, on the internet http://www.adea.org/DEPR/2004 Dental Ed At A Glance.pdf (visited August 9, 2006).

Addendum 3
Current Capacity of Local Public Dental Clinics

	On Site		Full-tim	e Staffing (40	hrs/wk)
County	Clinic?	No. Chairs	Dentists	Dent. Hyg.	Dent. Assist.
Allegany	Υ	4	1.04	2.60	2.65
Anne Arundel	Υ	5	2.13	2.40	4.00
Balt. City	Υ	5	2.56	0.00	5.50
Balt. County	Υ	8	2.63	1.00	2.63
Carroll	Υ	2	0.80	0.20	1.60
Frederick	Υ	4	1.88	0.88	2.15
Garrett	Υ	3	1.00	1.00	1.50
Harford*	Υ	3	0.00	0.00	0.00
Howard	Υ	3	0.88	0.20	1.00
Montgomery	Υ	16	5.91	3.40	5.80
Pr. George's	Υ	4	2.00	0.00	2.25
Washington	Υ	2	0.80	0.00	0.80
Wicomico	Υ	3	2.10	1.15	2.60
Calvert	N				
Caroline	N				
Cecil	N				
Charles	N				
Dorchester	N				
Kent	N				
Queen Anne's	N				
St. Mary's	N				
Somerset	N				
Talbot	N				
Worcester	N				

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^{*} Harford County dental clinic is currently undergoing renovations and does not at this time provide oral health services to the public. The number of chairs indicated is Harford's best estimate to the amount of service the clinic will provide when renovations are complete.

Addendum 4 Office of Oral Health Dentist

Duties and Responsibilities of the **Office of Oral Health Dentist** include:

- Lead clinical expert on dental public health in DHMH
- Develop policy regarding best strategies for improving dental public health outcomes
- Represent OOH with organizations with clinical interests, such as the Maryland Board of Dental Examiners, Maryland State Dental Association, etc.
- Monitor community water fluoridation
- Assist local health departments in establishing clinical dental programs
- Develop clinical protocols such as standards of care and infection control guidelines for local health department dental clinics
- Assess and evaluate local health department dental clinics
- Assist local health departments to be in compliance with federal and state oral health objectives, regulations, and initiatives
- Train dentists, dental hygienists, and other health care providers on topic such as: screenings for children, oral cancer, and fluoride varnish

Addendum 5
Salary Ranges for Oral Health Professionals

	State of	Maryland		Dental Industry Statistics					
	Base	Max	10%-tile	25%-tile	Median	75%-tile	90%-tile	Mean	
Dental	\$21,575	\$35,493	\$19,680	\$23,980	\$29,520	\$35,190	\$42,030	\$29,970	
Assistant*	\$10.37/hr	\$17.06/hr	\$9.46/hr	\$11.53/hr	\$14.19/hr	\$16.92/hr	\$20.21/hr	\$14.41/hr	
Dental	\$25,742	\$48,599	\$38,470	\$49,120	\$60,890	\$71,480	\$85,660	\$60,620	
Hygienist [†]	\$12.38/hr	\$23.36/hr	\$18.49/hr	\$23.62/hr	\$29.28/hr	\$34.36/hr	\$41.18/hr	\$29.15/hr	
Dentist [‡]	\$57,948	\$106,013	\$93,600 [§]	\$104,776	\$123,775	\$155,165	\$166,400 [§]	\$115,640	
	\$27.86/hr	\$50.97/hr	\$45.00/hr	\$50.37/hr	\$59.51/hr	\$74.60/hr	\$80.00/hr	\$55.60/hr	

^{*} Bureau of Labor Statistics, U.S. Department of Labor, Occupational Employment and Wages, May 2005 Edition, Dental Assistants, on the internet at http://www.bls.gov/oes/current/oes319091.htm (visited August 9, 2006).

[†] Bureau of Labor Statistics, U.S. Department of Labor, Occupational Employment and Wages, May 2005 Edition, Dental Hygienists, on the internet at http://www.bls.gov/oes/current/oes292021.htm (visited August 9, 2006).

Salary.com, Salary.com Salary Wizard, "Dentist" entry (Baltimore, Maryland), on the internet at http://swz.salary.com/salarywizard/layouthtmls/swzl compresult national HC07000220.html (visited August 11, 2006); Bureau of Labor Statistics, U.S. Department of Labor, Occupational Employment and Wages, May 2005 Edition, Dentists, All Other Specialists, on the internet at http://www.bls.gov/oes/current/oes291029.htm (visited August 9, 2006).

[§] As no reliable data has determined or specified 10th and 90th percentile salaries, these figures are best (conservative) estimates, based on the available data.

		Infrastructure, Benefits and Costs: Fiscal Year 2008 through Fiscal Year 2013								
	FY2008	FY2009	FY2010	FY2011	FY2012	FY2013				
			Infrastructure							
LARP-Dentists [†]	0	5	10	15	15	15				
Dental Clinics										
Completed	0	3	6	9	11	24				
In Progress	3	3	3	2	13	0				
OOH Dentist	1	1	1	1	1	1				
		Benefits [Vis	its per Year (Patients	per Year)]						
MDC-LARP*	0	5,000	10,000	15,000	15,000	15,000				
	(0)	(2,500)	(5,000)	(7,500)	(7,500)	(7,500)				
Dent al Clinics	0	10,200	20,400	30,600	37,400	105,700 [‡]				
	(0)	(5,100)	(10,200)	(15,300)	(18,700)	(52,850)				
Total Production	0	15,200	30,400	45,600	52,400	120,700				
	(0)	(7,600)	(15,200)	(22,800)	(26,200)	(60,350)				
			Costs [in \$1,000s]							
LARP-Dentists*	0	347	695	1,042	1,042	1,042				
Dental Clinics	2,040	2,040	2,040	1,360	1,000	0				
OOH Dentist	120	127	135	143	152	161				
Total Costs	2,160	2,514	2,870	2,545	2,194	1,203				

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^{*} Costs and benefits associated with salary increases for dental professionals are not included in this table. The benefits include alleviating the issues described in sec. 3.0 and 5.04. For estimated costs beyond what is currently expended, see sec. 6.04 with cost breakdown available in Addendum 6D.

[†] All figures with respect to MDC-LARP do not include current funds allocated. If these recommendations are adopted, the current MDC-LARP will phase out to end in FY2008 with the phase-in of the new program beginning in FY2009 as indicated in the chart.

[‡] This figure includes the 68,300 patient visits that can potentially result from existing dental clinics receiving improvement funds in FY2012.

Addendum 6B Dent-Care Loan Assistance Repayment Program Increased Funds Phase-In: FY2009 – FY2011

	FY 2009	FY 2010	FY 2011
No. Dentists	5	10	15
Annual Award	\$69.500	\$69.500	\$69,500
Per Dentist	\$07,500	\$07,500	\$09,500
Net Outflows	\$347,500	\$695,000	\$1,042,500

Addendum 6C Model Dental Care Unit Expense Breakdown

Model Dental Care Unit*						
Size: 3-Chair (est. 1,800 sq. ft)						
	Patients treated/yr: 1,000-1,800)				
	Visits/yr: 3,000-3,400					
٠ %	Remodeling (\$125/sq. ft) [†]	\$225,000				
Start- up Costs	Large Equipment	\$154,490				
Sts U	Supplies, Instruments, Small	\$43,550				
	Equipment					
	1 Dentist	\$110,000				
D ₀	1 Dental Hygienist	\$52,000				
tir tir ts	1 Dental Assistant	\$26,000				
Annual perating Costs	1 Program Coordinator	\$45,000				
Ar C	Dental Supplies	\$19,200				
0	Other (charts, office	\$2,200				
	supplies, etc.)					
	Total First year Costs	¢477 //O				

Total First year Costs: \$677,440

^{*} Figures derived from the *Dental Safety Net Clinic Manual*, **www.dentalclinicmaual.com**.

[†] Remodeling assumes that a facility will be available at the local health department, and can be adapted with electrical and plumbing to accommodate the dental clinic. If this is not the case, then additional costs for construction, utilities, rent and other associated costs with establishing a physical location will apply.

Addendum 6D County Dental Clinic Phase-In

FY2008 FY2009		FY2010		FY2011		FY2012			
County 1	\$680,000	County 4	\$680,000	County 7	\$680,000	County 10	\$680,000	Carroll/Washington count	
Count y 2	\$680,000	County 5	\$680,000	County 8	\$680,000	County 11	\$680,000	and other existing clinic	
County 3	\$680,000	County 6	\$680,000	County 9	\$680,000	,		Improvements	\$1,000,000
Totals:	\$2,040,000	Totals:	\$2,040,000	Totals:	\$2,040,000	Totals:	\$1,360,000	Totals:	\$1,000,000

 $\begin{array}{c} \textbf{Addendum 6E} \\ \textbf{Pro Forma Dental Professionals' Salary Expense Worksheet (in \$1,000s)}^* \end{array}$

			FY2006 State Pay Scale				Recommended Salary Rang			
	N	Base	Max	Ave	Est. Total Expense	Base	Max	Ave	Est. Total Expense	
Dental Assistants	5	21.6	35.5	28.6	143.0	21.6	42.0	31.8	159.0	
Dental Hygienists	4	25.7	48.6	37.1	148.4	38.5	85.7	62.1	248.4	
Dentists	11	57.9	106.0	82.0	902.0	93.6	166.4	130.0	1,430.0	
		FY20	006 Salary Ex	pense Total:	<u>\$ 1,193.4</u>	Recommended Salary Expense Total:			<u>\$ 1,837.4</u>	
						LESS: F	/06 Salary Ex	pense Total:	1,193.4	
						Tota	al Additional \	early Funds Requested:	\$ 644.0	

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^{*} These calculations assume that the distribution of salaries is approximately uniform along the salary scale. The final estimate for necessary additional yearly funds is less accurate with skewed distribution of salaries. A more thorough and detailed study of state employed dental professionals' salaries will provide a more definitive amount for the additional funds necessary to institute the recommended new salary scale for dental professionals.